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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,231	06/26/2003	John Herget	AAI-14207	5875

7590

03/30/2004

James D. Erickson  
Autoliv ASP, Inc.  
3350 Airport Road  
Ogden, UT 84405

EXAMINER

FELTON, AILEEN BAKER

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/607,231

Applicant(s)

HERGET, JOHN

Examiner

Aileen B Felton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/26/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 12, 13, 15, 21-24, 27-34, 38, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Evans et al(5,672,843).

Evans et al discloses a pyrotechnic charge that can be used as an igniter that comprises 5-55 % of a metal fuel such as zirconium, 35-80 % of an oxidizer such as potassium perchlorate, and 1-30 % of a secondary fuel such as boron, silicon, or carbon (col. 2, lines 18-55). In col.4, lines 30-36, Evans indicates that the igniter works to initiate the gas generant in an air bag apparatus. The composition is mixed in a wet blending technique, air dried, packed in a pyrotechnic cup and pressed (col. 4, lines 64-67 and col. 5, lines 1-6). The dry density is an inherent property of the composition of Evans et al. Add product by process paragraph.

3. Claims 1-9, 11, 13, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Mendenhall et al(6,077,372).

Mendenhall et al discloses an igniter composition that comprises 10-40 of fuels such as zirconium, titanium hydride and mixtures thereof and 60-90 % of oxidizer such as alkali metal perchlorates (i.e. potassium) (col. 4, lines 40-57). The igniter is mixed

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with a solvent such as isopropanol (col. 7, lines 5-15). Add product by process paragraph.

4. Claims 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jackson (3,203,843).

Jackson discloses multiple methods of making pyrotechnics. Jackson discloses a method of making a compacted igniter charge comprising zirconium, potassium perchlorate, and a fluoroelastomer. The ingredients are mixed with a solvent, dried and compacted (col. 1 and 2).

5. Claims 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Timmerman (5,993,578).

Timmerman discloses multiple methods of forming pyrotechnic compositions, including mixing with a solvent and drying.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mendenhall (6,077,372) as applied to claims 1-9, 11, 13, 14 above.

Mendenhall teaches the use of a mixture of zirconium and titanium hydride can be used. The total amount of the mixture is from 10-40 %.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the amount of each within the range disclosed by Mendenhall since varying these amounts will act to optimize the performance of the igniter. It is well-settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

8. Claims 9, 11, 14, 25, 26, 36, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al (5,672,843) as applied to claims 1-9, 11, 13, 14 above, and further in view of Mendenhall (6,077,372).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the titanium hydride as disclosed by Mendenhall since Mendenhall suggests that it can be used with a zirconium igniter composition.

9. Claims 10, 35, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al (5,672,843) as applied to claims 1-9, 11, 13, 14 above, and further in view of Nielson (6,224,099).

Nielson et al teaches the use of an additional fuel such as guanidine nitrate in an igniter composition.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the additional fuel as taught by Nielson with the composition of Evans et al since Evans suggests the additional fuels can be used.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aileen Felton whose telephone number is (703) 306-5751. The examiner can normally be reached on Monday through Friday from 6:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone, can be reached on (703) 306-4198.

The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7687. The fax number for submissions before a final action is (703) 872-9326, for after final submissions is (703) 872-9327, and customer service is (703) 872-9325.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

*Aileen B. Felton*  
Aileen B. Felton